

In re Application of:

Narayanan Sundararajan
Application No.: 10/609,322
Filed: June 26, 2003
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Attorney Docket No.: INTEL1360 (P15622)

REMARKS

Claims 1, 17 and 19 have been amended. Claims 16, 20 and 21 have been canceled without prejudice. Subsequent to the entry of the present amendment, claims 1-4, 6-15, 17, 19 and 22-25 are pending and at issue. These amendments and additions add no new matter as the claim language is fully supported by the specification and original claims.

I. Rejections under 35 U.S.C. §102

A. Claims 1-4, 6-17 and 19-25 are rejected under 35 U.S.C. §102(e) as allegedly anticipated by Beebe et al. (U.S. Patent 6,488,872 B1). Applicant respectfully traverses this rejection.

The Office Action alleges that “Beebe et al (see the entire document, in particular, col. 7, line 55 to col. 8, line 7; col. 8, line 66 to col. 9, line 35; col. 10, line 5 to col. 12, line 52) teach a process of making a structure attached to a microfluidic channel using hydrodynamic focusing, and also teach a process including steps of introducing a polymerizable fluid and a focusing fluid into a hydrodynamic focusing system, hydrodynamically focusing the polymerizable fluid and forming a structure in the hydrodynamic focusing system by polymerizing the polymerizable fluid as claimed.”

To anticipate, a single reference must inherently or expressly teach each and every element of claimed invention. *In re Spada*, 15 USPQ2d 1655 (Fed Cir. 1990); and *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). MPEP § 2131. Further, the claimed invention must be distinct from what is apparently inherent in the reference, and the reference must be enabling to place the allegedly disclosed matter in the possession of the public. *In re Fitzgerald et al.*, 619 F.2d 67, 205 USPQ 594 (CCPA 1980); and *Akzo N.V. v. U.S. Int'l Trade Comm'n*, 1 USPQ2d 1241, 1245 (Fed. Cir. 1986).

Applicants have amended claim 1 with the subject matter of claim 16, and amended claim 19 with the subject matter of claims 20 and 21. Amended claims 1 and 19 now include

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exposing a portion of the hydrodynamically focused fluid and forming a structure attached to a micro-fluidic channel by polymerizing the exposed portion of the hydrodynamically focused fluid to electromagnetic radiation, the structure having a first dimension that is based on hydrodynamic focusing and a second dimension that is based on a patterned mask.

A review of Beebe and the passages cited in the Office Action seems to indicate three different embodiments, none of which disclose the claimed invention. The first embodiment is the formation or manufacture of structures using a polymerizable mixture. The polymerizable mixture is polymerized using an energy source, such as a light, at preselected locations. Polymerization outside of these locations is avoided by use of a mask or photomask. (see Beebe, col. 7, line 55 to col. 8, line 7; col. 8, line 66 to col. 9, line 35) These first embodiments do not disclose the use of a focusing fluid with the polymerizable mixture. The second embodiments are directed to the formation of microscale devices again using photo masks to avoid polymerization outside of the desired location. In these embodiments, different polymerizable mixtures may be used to create functional components (Beebe, col. 10, lines 39-54). These second embodiments describe the formation of the microscale devices themselves and not the forming of a structure attached to a micro-fluidic channel. The third embodiments are directed to hydrodynamic focusing for continuously manufacture small diameter polymeric threads using a polymerizable mixture and inert liquid (Beebe, col. 11, line 66 to col. 12, line 28). These third embodiments do not form a structure attached to a micro-fluidic channel.

Applicants assert that Beebe does not teach each and every element of amended claims 1 and 19. Namely that the embodiments disclosed in Beebe do not disclose "forming a structure attached to a micro-fluidic channel based on hydrodynamic focusing using a hydrodynamically focused fluid and a focusing fluid; and selectively promoting polymerization in a portion of the hydrodynamically focused fluid by selectively exposing the portion to an electromagnetic radiation to form the structure having a first dimension that is based on hydrodynamic focusing and a second dimension that is based on a patterned mask" as required in amended claim 1. Similarly, Beebe does not disclose the method of amended claim 19.

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Therefore, for at least the reasons set forth above, Beebe et al. fails to teach each and every element of the claimed subject matter. Accordingly, Applicants submit that the claimed invention would not have been anticipated by Beebe et al. and, therefore, respectfully request that the rejection of the claims under 35 U.S.C. §102(e) be withdrawn.

B. Claims 1, 2 and 6-15 are rejected under 35 U.S.C. §102(b) as allegedly anticipated by Kenis et al. (“Fabrication Inside Microchannels Using Fluid Flow”). Applicant respectfully traverses this rejection.

Applicants have amended claim 1 with the subject matter of claim 16 (not part of this rejection) and amended claim 19 with the subject matter of claims 20 and 21 (not part of this rejection). The amended claims now include exposing a portion of the hydrodynamically focused fluid and forming a structure attached to a micro-fluidic channel by polymerizing the exposed portion of the hydrodynamically focused fluid to electromagnetic radiation, the structure having a first dimension that is based on hydrodynamic focusing and a second dimension that is based on a patterned mask. There is no disclosure in Kenis for forming a structure attached to a micro-fluidic channel in this way.

Therefore, for at least the reasons set forth above Kenis et al. fails to teach each and every element of the claimed subject matter. Accordingly, Applicants submit that the claimed invention would not have been anticipated by Kenis et al. and, therefore, respectfully request that the rejection of the claims under 35 U.S.C. §102(b) be withdrawn.

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II. Conclusion

In view of the amendments and above remarks, it is submitted that the claims are in condition for allowance, and a notice to that effect is respectfully requested. The Examiner is invited to contact Applicant's undersigned representative if there are any questions relating to this application.

No fee is deemed necessary with the filing of this paper. However if any fees are due, the Commissioner is hereby authorized to charge any fees, or make any credits, to Deposit Account No. 07-1896 referencing the above-identified attorney docket number. A copy of the Transmittal Sheet is enclosed.

Respectfully submitted,



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